

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 8-14, 17 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 8, on lines 21-22, "said portion of said collar" lacks clear antecedent basis. In claim 20, on lines 17-18, "said portion of said collar" lacks clear antecedent basis.

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 8-14 and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bartley-US Patent # 5,823,802. As to claims 8, 18 and 20, as best understood, Bartley discloses a device (cylinder pressure sensor 10) for detecting pressure in internal combustion engine 11 cylinder head and passing through a wall of engine 11 in orifice (channel 14), spark plug 23 in the orifice extending from inside to outside the cylinder, the spark plug 23 being movable (note col. 4, lines 44-53 indicating the spark plug is removable), collar/member having a fixed portion and a portion disposed outside the orifice and being

connected by a shoulder (note flanged guard ring which has a fixed portion (via sealed electrical connector 30) and a shoulder which leads to a perpendicular portion which is disposed outside the orifice), spark plug 23 with a confronting portion (spark plug connector 25) confronting the collar portion disposed outside the orifice, pressure sensitive means (sensing element 16), nut (guard ring 30) for removal of connector 25 for removal of the spark plug 23, see fig. 1 and col. 2, lines 3 et seq. Further, it is noted that Bartley does not specifically state that the pressure sensitive means 16 senses the pressure generated by the displacement of the spark plug and the actual description of the pressure being sensed is apparently omitted in the description. However, it is noted that the purpose of cylinder pressure sensor is to measure pressure in the cylinder in which the spark plug is mounted. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have realized that the pressure being measured by the sensing element 16 **causes some degree of displacement** (even if minute) of the spark plug given that the spark plug extends into the cylinder creating the pressure being measured. As to claim 9, the ring 40 indicates an annular shape as well as the connector 25 and pressure sensitive means 16 appear to be annular. As to claim 10, note fig. 1 depiction. As to claim 11, the connector 25 is on a side of the element opposite the wall. As to claim 12, the two portions do appear to be of greater diameter than the bottom portion of the orifice. As to claim 13, each of these elements are outside of the

bottom orifice. As to claim 14, note threading on shell 22. As to claims 17 and 19, note ring 40 appears to releasable with nut-connector 30.

Response to Arguments

3. Applicant's arguments with respect to claims 8-14 and 17-20 have been considered but are moot in view of the new ground(s) of rejection.
4. Applicant's arguments filed 1/27/10 have been fully considered but they are not persuasive. Applicant has argued that Bartley discloses a pressure sensor which can work alone because the cylinder head deformation is measured and since the spark plug is screwed into the cylinder head, any displacement would be negligible. Such arguments are not found persuasive because it is irrelevant whether the pressure sensor can work alone since the claim language merely recites detecting pressure changes that cause bodily axial movement of the plug which does not require that the axial movement of the plug be measured but rather only that the pressure changes be measured and it is also noted that the pressure change would inherently *cause some* movement of the plug since the pressures are high in the cylinder. Also, it is noted that there is no disclosure in Bartley that the spark plug is screwed into the orifice itself.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nashmiya S. Fayyaz whose telephone

number is 571-272-2192. The examiner can normally be reached on Tuesdays and Thursdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron E. Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/N. S. F./
Examiner, Art Unit 2856

/Hezron Williams/
Supervisory Patent Examiner, Art Unit 2856